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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,584	07/31/2001	Jin-Shan Wang	S2817HEC	1795

7590

09/21/2004

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/918,584	Applicant(s) WANG ET AL.	
	Examiner Callie E. Shosho	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 10-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 10-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/2/04 has been entered.

2. All outstanding rejection of record are overcome by applicants' amendment filed 7/2/04.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1 and 10-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants' have amended claim 1 to recite "water-soluble" hyperbranched polymeric dye comprising a hyperbranched polymer having a dye chromophore and a "hydrophilic group"

incorporated into the polymer base chain. It is the examiner's position that this phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of the phrase in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163.

As support for the above amendment, applicants point to the exemplary polymer structures on pages 8-9 of the present specification.

However, while these structures contain specific types of hydrophilic groups, i.e. NH group, these structures do not provide support for the broad recitation of "hydrophilic groups" as presently claimed.

As further support for the amendment to present claim 1, applicants note that the polymers that comprise the hyperbranched polymeric dye include polyamide, polyester, polyether, vinylic polymer, polyimide, polyesteramide, and polyurethane and that the base chains of all these polymers include hydrophilic groups, for examples, quaternary amines, carboxyl groups, or carbonyl groups.

However, it is not clear what hydrophilic groups applicant is referring to or how they are incorporated into the polymer base chain especially for well-known water-insoluble polymers such as polyurethane. For instance, polyurethane is formed by reacting polyisocyanate with hydroxyl containing material, i.e. $R_1CNO + R_2OH \rightarrow R_1NHCOOR_2$ and thus does not possess any hydrophilic groups in its base chain and is not inherently water-soluble. Similarly, the recitation of vinylic polymers encompasses polymers such as polystyrene which also does not possess hydrophilic group in its base chain and thus, it not inherently water-soluble. Thus, for these polymers and others, i.e. polyester, within the scope of the present invention, it is not clear

how these polymers are considered water-soluble or how they would possess hydrophilic groups in their base chain. While there is support on page 7, lines 13-16 of the present specification for reciting that the hyperbranched polymeric dye comprises polymers including polyamide, polyester, polyether, vinylic polymer, polyimide, polyesteramide, and polyurethane, it is not clear where there is support in the specification to recite that all these polymers are water-soluble and possess hydrophilic groups in their base chain as now presently claimed. Clarification is requested. It is noted that there is support for the recitation of water-soluble polyamide as found on page 4, lines 17-18 of the present specification.

Further, it is noted that page 5 of the present specification discloses methods for preparing the hyperbranched polymeric dyes using different monomers, i.e. $M^3-R^2-M^4_p$ where M^3 and M^4 are, for instance, $-COOH$, $-OH$, NH , or NH_2 . While the use of these monomers would appear to incorporate hydrophilic groups into the polymer base chain of the polymer which they form, it is not readily apparent as to how or if monomers recited on page 5 of the present specification would produce, for instance, water-soluble hyperbranched polyurethane with hydrophilic groups in the base chain. Clarification is requested. Further, even if these monomers were able to produce water-soluble polyurethane, polyester, etc., this would provide support for the recitation of only specific types of hydrophilic groups, i.e. $COOH$, as opposed to the present claims which have been amended to broadly recite "hydrophilic groups".

Thus, while it appears that there is support in the present specification for the recitation in the claims of specific types of water-soluble polymer, i.e. polyamide, and/or specific types of hydrophilic groups, i.e. NH group, it is the examiner's position that there is no support in the specification as originally filed to broadly recite "water-soluble" hyperbranched polymeric dye

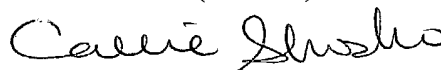
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comprising a hyperbranched polymer having a dye chromophore and a "hydrophilic group" incorporated into the polymer base chain.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
9/20/04